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AUTHOR Knight, K.; And Others
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ABSTRACT

To attempt to incorporate the perceptions of consumers of alcohol education programs about topic relevance and importance, a modified version of a methodology that extracts, evaluates, and combines information from novices and experts to determine commonly held scripts and schema was used. In the first of two studies, 37 students at Texas Christian University (TCU) generated and evaluated major categories and subcategories they believed to be important in a drug and alcohol education program for high school seniors (HSSs). In the second study, 24 students at TCU were presented with categories and subcategories mentioned by 50% of participants in the first study, and had to rate: (1) how important knowledge of each item is for HSSs; (2) the degree to which the average HSS is misinformed about each item; and (3) the amount of knowledge the average HSS has about each item. Results from both studies indicate that the extraction methodology has potential for developing alcohol education programs tailored to the prior knowledge and perceived needs of consumers. Categories elicited were consistent and easily ranked and compared statistically, providing an indication of the perceived importance, degree of relative misinformation, and levels of existing knowledge of the subjects. The methodology was also sensitive enough to uncover, in the second study, gender subgroup differences on some major categories and subcategories. Four tables contain study data. (Author/SLD)

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A Methodological Approach to Eliciting Information Relevant to Alcohol Education Programs

Knight, K., Dansereau, D.F., Peel, J.L., Skaggs, L.P., Conner, D.B., & Dees, S.M.

Texas Christian University
Department of Psychology
Box 32878
Fort Worth, TX 76129

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A Methodological Approach to Eliciting Information

Relevant to Alcohol Education Programs

Knight, K., Dansereau, D.F., Peel, J.L., Skaggs, L.P.,

Conner, D.B., & Dees, S.M.

Abstract

Most existing alcohol education programs have failed to incorporate consumers' perceptions of topic relevance and importance. This study utilized a modified version of a methodology which extracts, evaluates, and combines information from novices and experts in order to determine commonly held scripts and schemas. In the first study, 37 college students generated and evaluated major categories and subcategories that they believed were important in a drug and alcohol education program for high school seniors. In the second study, 24 students were presented with the major categories and subcategories that were mentioned by at least 50% of the participants in the first study: participants rated how important it is for a high school senior to have knowledge about each item, the degree to which the average high school senior is misinformed about each item, and the amount of knowledge the average high school senior has about each item. Results of the two studies suggest that the extraction methodology has substantial potential for developing alcohol education programs tailored to the prior knowledge and perceived needs of the consumers. Consistent categories and their subcategories were elicited from participants, and they were easily ranked and compared statistically. The methodology was also sensitive enough to uncover gender sub-group differences on some of the major categories and their subcategories.

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One of the first steps in the development of any educational curriculum requires a selection of topics and a subsequent determination of how much instructional emphasis a particular topic will receive. This step is especially important in the education of personal issues, such as alcohol use or abuse, where the students (i.e., the potential consumers) can be quickly "turned-off" by topics they view as being irrelevant or "old hat." Unfortunately, most existing programs (e.g., Durvea, 1983) appear to be derived from experts and theoretical models in a "top-down" fashion. Consumer perceptions of topic relevance and importance are not usually considered during early stages of program development. To remedy this situation, a methodology is needed to systematically extract, assess, and combine information from potential consumers of alcohol education programs and experts in the field of alcohol education.

In this regard, a promising methodology has emerged from studies of human memory (Bower, Black, & Turner, 1979; Dansereau & Armstrong, 1981; Brooks & Dansereau, 1981). This methodology has been used to extract, evaluate, and combine information from novices and experts in order to determine commonly held scripts and schemas. A modified version of this methodology is used in the present two-part study and is presented in Table 1.

The results of two studies were examined to assess the consistency of alcohol education topics generated, their face validity, and their differential characteristics (i.e., perceived

importance, degree of consumer knowledge, and degree of consumer misinformation). The power of the methodology in differentiating between identifiable sub-groups (e.g., males and females) also was evaluated.

In the Study 1, college students were asked to generate and evaluate major categories and subcategories that they believed were important in a drug and alcohol education program for high school seniors. In Study 2, participants were presented with the major categories and subcategories that were mentioned by at least 50% of the participants in Study 1, with a brief description of a major category or subcategory being provided when needed. They were requested to rate how important it is for a high school senior to have knowledge about each item, the degree to which the average high school senior is misinformed about each item, and the amount of knowledge the average high school senior has about each item.

Study 1

The general purpose was to use the extraction methodology (see Table 1) to elicit major categories and subcategories that participants believe a high school senior should know about alcohol.

Method

Thirty seven participants from general psychology classes at Texas Christian University completed all parts of Study 1 for extra-credit points.

Two sets of written instructions were used. The first set was divided into three parts. Initially, participants were requested to list the major categories of information that a high school senior should know about alcohol. Second, participants were requested to describe each major category and explain why it is important to educate high school seniors about that category. Third, participants listed the important subcategories of information a high school student needed to know about each major category. The participants made scaled judgments of the items they listed as to the importance, the amount of detail needed, and the degree of difficulty in teaching the item. In the second set of instructions, participants were asked to fill out a task reaction questionnaire.

Results and Discussion

Categories and subcategories were collapsed across synonyms and similar descriptions of meaning. Ten out of 21 categories met the stringent criterion of 50% mean agreement between all the participants (see Table 2), with the range of mean percent agreement being from 50.00% to 92.86%. Sixty-two subcategories also met the cutoff criterion. For example, two of the subcategories for the major category "Physiological Consequences to Alcohol Use and Abuse" included "Damage to the Brain," and "Effects on Movement."

Chi-square tests ($p<.05$) revealed no significant gender subgroup differences on any of the elicited major categories, but

significant gender sub-group differences were found on elicited subcategories. For example, on the major category "Antecedent Factors to Alcohol Use," subcategory "Peer Pressure," 73% of the males listed the subcategory, where only 42% of the females listed the subcategory. On the task reactions questionnaire, females indicated that the extraction process helped to clarify their thoughts and feelings about alcohol use significantly ($t=2.24$, $p<.05$) more than males (means=4.48 and 2.86 respectively, on a scale of 0 to 8, with a higher score indicating that the task helped to better clarify thoughts and feelings).

Both males and females indicated that the task of listing major categories and their subcategories was easy to do (males=2.84, females=3.54, on a scale of 0 to 8, with a higher score indicating greater difficulty in doing the task).

As the results suggest, the task was easy to do, consistent major categories and their subcategories were elicited, and significant sub-group differences were detected.

Study 2

Study 2 set out to validate the importance of the generated categories, determine sensitivity to sub-group differences, and highlight items of high importance that coincide with rankings of high misinformation and/or low knowledge.

Method

Twenty four participants from two psychology classes at Texas Christian University received extra-credit points.

A three page questionnaire was used in which the ten major categories from Study 1 and a subset of their subcategories were listed in one column. Next to this column were three adjacent columns used for rating the following: how much information the average high school senior knows about each item (on a scale from 0 to 8, with a higher score indicating a larger among of knowledge), how important it is for the average high school senior to know each of the items (on a scale from 0 to 8, with a higher score indicating greater importance), and how misinformed the average high school senior is about each item (on a scale from 0 to 8, with a higher score indicating a higher degree of being misinformed).

Results and Discussion

As exhibited in Table 2, all ten major categories were validated as being important. The major categories "Antecedent Factors to Alcohol Use and Abuse" and "Social Consequences of Alcohol Use and Abuse" tied for the lowest ranking with a mean of 6.96. The major category "Treatment for Alcohol Abuse" had the highest ranking with a mean of 7.58. Table 3 shows the rank ordering of relative misinformation and Table 4 shows the rank ordering of relative degree of knowledge. A two-tailed t test ($p<.05$) was used to compare the highest and lowest ratings. Relative importance revealed no significant difference between the highest and lowest ratings of importance. However, there was a significant difference ($p<.05$) between the highest and lowest

ratings of the degree of knowledge a high school senior is believed to have, with the major category of "Legal Aspects of Alcohol Use" having the highest indicated degree of knowledge (mean=5.09) and the major category of "Treatment of Alcohol Abuse" having the lowest indicated degree of knowledge (mean=2.71). There was also a significant difference ($p<.05$) between the top and bottom ratings of the degree of misinformation a high school senior is believed to have, with the major category of "Psychological Consequences of Alcohol Use and Abuse" having the highest indicated degree of misinformation (mean=6.09) and the major category of "Legal Aspects of Use and Abuse" having the lowest indicated degree of misinformation (mean=4.16).

Significant ($p<.05$) gender sub-group differences were found on both major categories and subcategories. For example, males indicated, more often than females, that high school seniors were more misinformed about the major category "Alcohol as a Drug" (means=5.67, 3.58, respectively). On the major category "Physical Consequences of Alcohol Use and Abuse," subcategory "Addiction," males indicated, more often than females, that the subcategory was significantly ($p<.05$) more important for the average high school senior to know about.

Both major categories and subcategories were found to have ratings that deserved to be highlighted. For example, on the major category "Use Versus Abuse of Alcohol," participants indicated that the category was high in importance (mean=7.57),

but that the average high school senior had little knowledge about the item (mean=3.59) and had a high degree of misinformation (mean=5.75). On the same major category, the subcategory "Different Tolerance Levels--Differences Between People and How Much They Can Drink," participants indicated that the subcategory was of high relative importance (mean=6.63) and they indicated that the average high school senior had a high degree of misinformation about the subcategory (mean=5.02).

General Discussion

The results suggest that the extraction methodology has substantial potential for developing alcohol education programs tailored to the prior knowledge and perceived needs of the consumers. Consistent categories and their subcategories were elicited from participants familiar with consumers, specifically high school seniors. Both the categories and the subcategories were easily ranked and compared, providing an indication of perceived importance, degree of relative misinformation, and levels of existing knowledge. The methodology was sensitive enough to uncover gender sub-group differences on some of the major categories and their subcategories. In addition, the extraction methodology can also be administered recursively to experts, and the results compared with and combined with those elicited from the consumer. The curriculum then can be designed to bridge gaps between the consumers' perceptions and those of alcohol experts.

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Table 1

Steps to Extracting, Evaluating, and Combining Information from Novices and Experts

Steps	Procedure
1	Instruct the participants (i.e., potential consumers) to list the major categories needed in an alcohol education program for a specific group (i.e., high school seniors).
2	Instruct participants to list the subcategories for each major category listed.
3	Collapse the major categories and subcategories across synonyms and paraphrases.
4	Examine the distribution of percentages of agreement on each major category and subcategory, and decide on a cutoff criterion (typically between 25% and 50% agreement).
5	Administer a questionnaire consisting of those major categories and subcategories that either met or exceeded the cutoff criterion to an independent set of raters (again, potential consumers).
6	Repeat the above procedure with experts as the participants.
7	Compare and contrast the results for both consumers and experts.
8	Design a curriculum tailored to the results, focusing on items that should be highlighted, such as gaps between experts and novices.

Table 2

Major Category Rankings

"Use the following scale to rate how important it is for the average high school senior to know each item".

0 1 2 3 4 5 6 7 8

Not Very Important — Moderately Important — Extremely Important

Ranking of Major Category	Importance Rating of Major Category	
1) Treatment for Alcohol Abuse	7.58	<--------
2) Use Versus Abuse of Alcohol	7.57	<---- Tied
3) Alcoholism	7.57	<----
4) Physiological Consequences of Alcohol Use and Abuse	7.38	
5) Alcohol as a Drug	7.25	No Significant Difference ($p<.05$)
6) Psychological Consequence of Alcohol Use and Abuse	7.19	
7) Behavioral Consequences of Alcohol Use and Abuse	7.17	
8) Legal Factors Related to Alcohol Use and Abuse	7.07	
9) Antecedent Factors to Alcohol Use and Abuse	6.96	<---- Tied <--
10) Social Consequence of Alcohol Use and Abuse	6.96	<----

Table 3

Degree of Misinformation Major Category Rankings

"Use the following scale to rate how misinformed the average high school senior to know each item":

0 1 2 3 4 5 6 7 8

Not Very Misinformed — Moderately Misinformed — Extremely Misinformed

Ranking of Major Category	Mean Rating		Standard Deviation
1) Psychological Consequence of Alcohol Use and Abuse	6.09	<---	1.44
2) Use Versus Abuse of Alcohol	5.75		1.79
3) Behavioral Consequences of Alcohol Use and Abuse	5.71		1.60
4) Treatment for Alcohol Abuse	5.42		1.98
5) Social Consequence of Alcohol Use and Abuse	5.29		1.68
		Significant Difference	
6) Physiological Consequences of Alcohol Use and Abuse	5.25	(p<.05)	1.61
7) Alcoholism	5.13		2.01
8) Antecedent Factors to Alcohol Use and Abuse	4.75		1.39
9) Alcohol as a Drug	4.58		1.98
10) Legal Factors Related to Alcohol Use and Abuse	4.16	<---	1.93

Table 4

Degree of Knowledge Major Category Rankings

"Use the following scale to rate how much knowledge the average high school senior has about each item":

0 1 2 3 4 5 6 7 8

A Small Amount of Knowledge — A Moderate Amount of Knowledge — A Large Amount of Knowledge

Ranking of Major Category	Mean Rating		Standard Deviation
1) Legal Factors Related to Alcohol Use and Abuse	5.09	<---	2.21
2) Behavioral Consequences of Alcohol Use and Abuse	4.67		2.12
3) Alcohol as a Drug	4.50		2.17
4) Antecedent Factors to Alcohol Use and Abuse	4.17		1.88
5) Alcoholism	4.13		1.90
		Significant Difference	
6) Social Consequence of Alcohol Use and Abuse	4.04	(p<.05)	1.90
7) Use Versus Abuse of Alcohol	3.59		1.83
8) Physiological Consequences of Alcohol Use and Abuse	3.02		2.17
9) Psychological Consequence of Alcohol Use and Abuse	3.02		2.17
4) Treatment for Alcohol Abuse	2.71	<---	1.88